

Wednesday, July 22, 2020

Attn: Mr. Keith Gammell Barnhardt Mfg. Co. 247 Main Rd P.O. Box 3 Colrain, MA 01340

Project ID: Q3 SLUDGE SOLFIDE

SDG ID: GCG34510

Sample ID#s: CG34510 - CG34511

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Laboratory Director

NELAC - #NY11301

CT Lab Registration #PH-0618

MA Lab Registration #M-CT007

ME Lab Registration #CT-007 NH Lab Registration #213693-A,B NJ Lab Registration #CT-003 NY Lab Registration #11301

PA Lab Registration #68-03530

RI Lab Registration #63 **UT Lab Registration #CT00007**

VT Lab Registration #VT11301



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

July 22, 2020

SDG I.D.: GCG34510

Project ID: Q3 SLUDGE SOLFIDE

Client Id	Lab Id	Matrix
SLUDGE GRAB	CG34510	SLUDGE
EFFLUENT	CG34511	WASTE WATER



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Analysis Report

Location Code:

July 22, 2020

FOR: Attn: Mr. Keith Gammell

Barnhardt Mfg. Co.

247 Main Rd P.O. Box 3

В

Colrain, MA 01340

Sample InformationCustody InformationDateMatrix:SLUDGECollected by:KG07/15/20

Received by:

Rush Request: Standard Analyzed by: see "By" below

P.O.#: G11301

BARNHARD

Laboratory Data

SDG ID: GCG34510
Phoenix ID: CG34510

<u>Time</u>

6:30

17:16

07/15/20

Project ID: Q3 SLUDGE SOLFIDE

Client ID: SLUDGE GRAB

		RL/					
Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference
Boron	96.7	3.5	mg/Kg	1	07/17/20	CPP	SW6010D
Cadmium	< 0.86	0.86	mg/Kg	1	07/17/20	CPP	SW6010D
Chromium	14.4	0.86	mg/Kg	1	07/17/20	CPP	SW6010D
Copper	21.7	0.86	mg/Kg	1	07/17/20	CPP	SW6010D
Mercury	< 0.56	0.56	mg/kg	5	07/17/20	RS	SW7471B
Potassium	3690	1.7	mg/Kg	1	07/17/20	CPP	SW6010D
Molybdenum	3.65	0.86	mg/Kg	1	07/17/20	CPP	SW6010D
Nickel	5.45	0.86	mg/Kg	1	07/17/20	CPP	SW6010D
Lead	1.06	0.86	mg/Kg	1	07/17/20	CPP	SW6010D
Zinc	32.5	0.86	mg/Kg	1	07/17/20	CPP	SW6010D
Percent Solid	11.3	1	%		07/15/20		SW846-%Solid
Total Solids @ 104C	11.3	0.1	%	1	07/15/20	AP/EP	SM2540B-11
Ammonia as Nitrogen	4010	603	mg/Kg	1	07/17/20	ARG	E350.1
Nitrite as N	< 0.88	0.88	mg/kg	10	07/16/20	BS/GD	SW9056A
Nitrate as N	< 4.42	4.42	mg/kg	10	07/16/20	BS/GD	SW9056A
pH - Sludge	7.90	1.00	pH Units	1	07/15/20 22:09	AP	SW9045
Nitrogen Tot Kjeldahl	75900	1210	mg/Kg	1	07/17/20	ARG	E351.1
Total Nitrogen	75900	0.05	mg/Kg	1	07/17/20	ARG	SM4500NH3/E300.0-97
Phosphorus, Total	6510	110	mg/Kg	25	07/21/20	JR	SM4500PE-11
Mercury Digestion	Completed				07/17/20	VT/VT	SW7471B
Sludge Ext. for PCB	Completed				07/15/20	E/E	SW3550C
Total Metals Digest	Completed				07/16/20	S/AG	SW3050B
Polychlorinated Biph	<u>nenyls</u>						
PCB-1016	ND	430	ug/Kg	1	07/16/20	SC	SW8082A
PCB-1221	ND	430	ug/Kg	1	07/16/20	SC	SW8082A
PCB-1232	ND	430	ug/Kg	1	07/16/20	SC	SW8082A
PCB-1242	ND	430	ug/Kg	1	07/16/20	SC	SW8082A

Project ID: Q3 SLUDGE SOLFIDE Phoenix I.D.: CG34510
Client ID: SLUDGE GRAB

		RL/					
Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	
PCB-1248	ND	430	ug/Kg	1	07/16/20	SC	SW8082A
PCB-1254	ND	430	ug/Kg	1	07/16/20	SC	SW8082A
PCB-1260	ND	430	ug/Kg	1	07/16/20	SC	SW8082A
PCB-1262	ND	430	ug/Kg	1	07/16/20	SC	SW8082A
PCB-1268	ND	430	ug/Kg	1	07/16/20	SC	SW8082A
QA/QC Surrogates							
% DCBP	71		%	1	07/16/20	SC	30 - 150 %
% DCBP (Confirmation)	71		%	1	07/16/20	SC	30 - 150 %
% TCMX	53		%	1	07/16/20	SC	30 - 150 %
% TCMX (Confirmation)	57		%	1	07/16/20	SC	30 - 150 %

Massachusetts does not offer certification for Soil/Solid matrices.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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Phyllis Shiller, Laboratory Director

July 22, 2020

Reviewed and Released by: Rashmi Makol, Project Manager



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 22, 2020

FOR: Attn: Mr. Keith Gammell

Barnhardt Mfg. Co.

247 Main Rd P.O. Box 3

Colrain, MA 01340

Sample Informat	<u>ion</u>	Custody Informa	<u>tion</u>	<u>Date</u>	<u>Time</u>
Matrix:	WASTE WATER	Collected by:	KG	07/15/20	7:00
Location Code:	BARNHARD	Received by:	В	07/15/20	17:16

Rush Request: Standard Analyzed by: see "By" below

P.O.#: G11301

Laboratory Data SDG ID: GCG34510

Phoenix ID: CG34511

Project ID: Q3 SLUDGE SOLFIDE

Client ID: EFFLUENT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference	
Phenolics	< 0.015	0.015	mg/L	1	07/20/20	MSF	E420.4	
Sulfide	< 0.05	0.05	mg/L	1	07/20/20	GD	SM4500S-D-11	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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Phyllis Shiller, Laboratory Director

July 22, 2020

Reviewed and Released by: Rashmi Makol, Project Manager



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QA/QC Report

July 22, 2020

QA/QC Data

SDG I.D.: GCG34510

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 537815 (mg/kg)	, QC San	nple No:	: CG3431	1 2X (C	G34510))								
Mercury - Soil	BRL	0.03	0.07	0.07	NC	104	103	1.0	77.9	82.5	5.7	75 - 125	20	
Comment:														
Additional Mercury criteria: LCS	acceptanc	e range	for waters	is 80-120	% and fo	or soils i	s 75-125°	%						
QA/QC Batch 537708 (mg/kg)	, QC San	nple No:	CG2663	2 (CG34	1510)									
ICP Metals - Soil														
Boron	BRL	1.3	<1.5	<1.6	NC	111	110	0.9	90.8			75 - 125	35	
Cadmium	BRL	0.33	0.92	0.88	NC	113	109	3.6	100			75 - 125	35	
Chromium	BRL	0.33	16.5	9.53	53.6	118	112	5.2	98.4			75 - 125	35	r
Copper	BRL	0.67	16.2	26.7	49.0	115	110	4.4	96.9			75 - 125	35	r
Lead	BRL	0.33	14.0	18.1	25.5	118	115	2.6	99.1			75 - 125	35	
Molybdenum	BRL	0.33	1.58	1.15	NC	120	115	4.3	99.5			75 - 125	35	
Nickel	BRL	0.33	13.6	11.8	14.2	116	113	2.6	97.9			75 - 125	35	
Potassium	BRL	5.0	1840	2870	43.7	116	123	5.9	128			75 - 125	35	m,r
Zinc	BRL	0.67	46.8	51.1	8.80	115	109	5.4	89.8			75 - 125	35	
Comment:														
Additional: LCS acceptance rang	je is 80-12	0% MS a	acceptanc	e range 7	75-125%									

m = This parameter is outside laboratory MS/MSD specified recovery limits. r = This parameter is outside laboratory RPD specified recovery limits.



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QA/QC Report

July 22, 2020

QA/QC Data

SDG I.D.: GCG34510 % Sample Dup Dup LCS **LCSD** LCS MS **MSD** MS Rec **RPD** Blank RL Result Result **RPD RPD** Limits Limits Parameter **RPD** % % % % QA/QC Batch 537606 (PH), QC Sample No: CG26263 (CG34510) pH at 25C - Soil 7.44 0.10 101 85 - 115 20 Comment: Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%. QA/QC Batch 537569 (%), QC Sample No: CG33817 (CG34510) **Total Solids** BRL 0.1 8.11 8.38 3.30 100 75 - 125 30 Comment: Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%. QA/QC Batch 538150 (mg/Kg), QC Sample No: CG34510 (CG34510) Phosphorus, Total as P BRL 0.50 6510 6320 92.3 NC 75 - 125 30 Comment: Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%. QA/QC Batch 538032 (mg/L), QC Sample No: CG35257 (CG34511) Sulfide BRL 0.05 < 0.05 < 0.05 107 NC 107 90 - 110 20 QA/QC Batch 537683 (mg/L), QC Sample No: CG32396 (CG34510) 0.05 99.2 Nitrate as Nitrogen **BRL** 1.02 0.89 13.6 91.1 90 - 110 20 Nitrite as Nitrogen BRL 0.004 < 0.004 < 0.008 NC 90.1 99.3 90 - 110 20 QA/QC Batch 537830 (mg/Kg), QC Sample No: CG32582 17.5X (CG34510) Ammonia as Nitrogen BRL 3.51 22000 21800 0.90 85.3 115 75 - 125 30 Nitrogen Tot Kjeldahl BRL 3.51 35700 57500 NC NC 112 75 - 125 30 Comment: TKN is reported as Organic Nitrogen in the Blank, LCS, DUP and MS. QA/QC Batch 537800 (mg/L), QC Sample No: CG34579 (CG34511) Phenolics BRL 0.015 <0.015 <0.015 107 95.0 90 - 110

20



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QA/QC Report

July 22, 2020

QA/QC Data

SDG I.D.: GCG34510

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 537610 (ug/Kg), QC Sample No: CG33108 (CG34510)										
Polychlorinated Biphenyls	- Sluc	<u>lge</u>								
PCB-1016	ND	13	57	56	1.8				40 - 140	30
PCB-1221	ND	13							40 - 140	30
PCB-1232	ND	13							40 - 140	30
PCB-1242	ND	13							40 - 140	30
PCB-1248	ND	13							40 - 140	30
PCB-1254	ND	13							40 - 140	30
PCB-1260	ND	13	84	79	6.1				40 - 140	30
PCB-1262	ND	13							40 - 140	30
PCB-1268	ND	13							40 - 140	30
% DCBP (Surrogate Rec)	85	%	93	90	3.3				30 - 150	30
% DCBP (Surrogate Rec) (Confirm	89	%	96	93	3.2				30 - 150	30
% TCMX (Surrogate Rec)	62	%	67	64	4.6				30 - 150	30
% TCMX (Surrogate Rec) (Confirm	62	%	68	64	6.1				30 - 150	30

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis/Shiller, Laboratory Director

July 22, 2020

Wednesday, July 22, 2020

Sample Criteria Exceedances Report GCG34510 - BARNHARD

Criteria: None State: MA

State: MA

RL Analysis
SampNo Acode Phoenix Analyte Criteria Units

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

^{***} No Data to Display ***



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Analysis Comments

July 22, 2020 SDG I.D.: GCG34510

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

	المحا			
Cooler: Yes No IPK I ICE No Of	ontact Options: S471 x 3722 Mull of Capainand t	- # 5 C	The state of the s	Data Format Excel CISSING GISING GISING GISING Ther I Checklist Tier II Checklist T
Cooler: IPK Colant: IPK Colant	Data Delivery/Contact Options: Fax: Prone: Prone: Prone:	Project P.Ö. 6- This sec	(G) / (0) 18 18 18 18 18 18 18 18 18 18 18 18 18	
ORD	J., Manchester, CT 06040 Fax (860) 645-0823 645-8726	Sloke + 501 fide Commission	**************************************	RCP Cert GW Protection SW Protection GA Mobility GB Mobility CBEC I/C DEC Other State where samples
CHAIN OF CUSTODY RECORD	37.	Sering Kerth	is in the state of	Rational CI
HAIN OF	ast Middle Tumpike, P.O. Box Email: info@phoenixlabs.com Client Services (8)	Project: Report to: Invoice to:	Regard Analysis Analy	Date: Time: 7-√-€ 133√ 7-15-1
Ö	587 East M Email:		M=Waste Water W=Wipe OIL=Oil Date Sampled Sampled 7-15-20 C-30-4-15-20 7-4-1	Turnaround Time: Turnaround Time: 1 Day* 2 Days* 3 Days* Standard Other Collection
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-	1X oratorie		=Ground Water SW= iment SL=Sludge Signature (Other) Customer Sample Identification Identificatio	Accepted by
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